Remarks

The Applicants have amended the Specification to correct typographical errors, change idiomatic English and place the Specification into contemporary form. Entry into the official file is respectfully requested.

The Applicants note the objection to Claims 15 and 16 under 37 CFR §1.75(c). Those claims have been amended to place them into condition for allowance by eliminating the reference to intended use. Entry into the official file and consideration on the merits is also respectfully requested.

The Applicants have amended Claim 1 to incorporate the subject matter of Claims 3 and 5 therein. Claims 3 and 5 have accordingly been cancelled. Claim 4 has also been cancelled. Further, Claim 10 has been cancelled, while Claims 11-13 have been amended to conform with the changes made to Claim 1. Entry into the Official File and consideration on the merits is respectfully requested.

The Applicants note the rejection of Claims 1-16 under 35 U.S.C. §103 over the hypothetical combination of Mogami, Yamamoto or Asano with Klatt. The Applicants note with appreciation the Examiner's helpful and detailed comments with respect to the theoretical application of the various references and their associated disclosure to the claims. Nonetheless, the Applicants respectfully submit that all of Claims 1-16 are patentable over the primary reference and the secondary references, whether taken individually or collectively, for the reasons set forth in detail below.

Klatt discloses a molding composition that includes 30-96% of a polyester, 1-30% melamine cyanurate, 1-30% of at least one phosphorus-containing flame retardant, 0.01-5% of at least one ester or amide and, optionally, up to 60% of other additives and processing aids. The other additives and processing aids, in addition to being completely optional, span a wide variety of items that are characterized as conventional additives and processing aids as set forth in column 7 at line 46.

Examples of such conventional additives and processing aids span through the bottom of column 7, all of column 8, all of column 9, all of column 10, all of column 11, all of column 12 and through the first full paragraph of column 13. In other words, Klatt refers to optional additives that can be almost any type of material that one can contemplate or imagine. Thus, no particular importance is attributable to any particular ones of the literally hundreds of possibilities disclosed by Klatt.

The Official Action helpfully refers to column 11, lines 42-48 as examples of calcium silicate, magnesium carbonate and barium sulfate as the components attributable to the Applicants' claimed alkaline earth metal compound. However, the Applicants note that those particular materials are characterized as particulate fillers. Accordingly, those fillers have no particular characteristic that is attributable to their presence.

This is sharply contrasted to the Applicants' claimed subject matter wherein the alkaline earth metal compounds are added in a prescribed amount to achieve a particular effect. In that regard, the Applicants invite the Examiner's attention to page 22 of the Applicants' Specification beginning in paragraph 0069 for the discussion of the alkaline earth metal compounds. The Applicants have discovered that the alkaline earth metal compounds play a particularly important role in mechanical characteristics and hydrolysis resistance. Klatt utterly fails to teach or suggest this important point.

The Applicants have further discovered that not only does the presence of the alkaline earth metal compounds play such a role, but that the desired characteristics are obtained within the particularly prescribed amount, namely 0.1-5%. This is demonstrated by reference to Tables 3 and 4 of the Applicants' Specification which may be found on pages 51 and 52, respectively. It can be seen by reference to Examples 17 and 18 on the one hand and Comparative Examples 7 and 8 on the other hand that the hydrolysis resistance and metal pollution characteristics are deeply effected by the presence and amount of the claimed alkaline earth compound. In particular, Examples 17 and 18

contain 3 and 4%, respectively, of calcium carbonate. They have excellent hydrolysis resistance and metal pollution characteristics. This is sharply contrasted to Comparative Examples 7 and 8 which contain 6 and 10%, respectively, of the calcium carbonate. Both 6 and 10% of the calcium carbonate are outside of the upper limit of 5% of the alkaline earth compound. It can be seen by reference to the hydrolysis resistance and metal pollution characteristics that in both instances and in both comparative examples, the results are quite poor.

The Applicants respectfully submit that the examples and comparative examples described above establish unexpected results with respect to the claimed alkaline earth metal compounds and the quantities associated with the presence of those compounds. In particular, the Applicants established that when there is no alkaline earth metal compound present in the composition, the hydrolysis resistance and metal pollution characteristics are poor. The mere inclusion of a small amount of the alkaline earth metal compounds such as 2, 3 or 4% as shown in Examples 17-19, dramatically increases the hydrolysis resistance and metal pollution characteristics. However, when the amount of the claimed alkaline earth metal compound exceeds 5% as established in Comparative Examples 7 and 8, the hydrolysis resistance and metal pollution characteristics revert back to their poor state as in the situation where there is no alkaline earth metal compound.

The Applicants therefore respectfully submit that they have established unexpected results associated with the claimed range of 0.1-5% of alkaline earth metal compound. Such unexpected results are clearly not taught or suggested by Klatt. As mentioned above, Klatt literally refers to hundreds of optional fillers, only several of which are, essentially by coincidence, alkaline earth metal compounds. However, their presence is given no importance with respect to any characteristics, much less the particular characteristics described above. Also, the quantities of those materials are demonstrated as being utterly unimportant in Klatt inasmuch as they need not be

present at all and can be present up to an amount of 50%. Thus, the Applicants, respectfully submit that Klatt fails to teach or suggest the subject matter of Claims 1-16.

The Applicants respectfully submit that hypothetically combining Mogami with Klatt does nothing to cure the deficiency set forth above with respect to Klatt. Mogami discloses flame retardant resin compositions including a thermoplastic polyester, a nitrogen-containing heterocyclic compound or salt thereof, a compound having at least two functional groups and, optionally, a phosphorus based flame retarder. Mogami also discloses that "as occasion demands" other flame retarders than the phosphorus based flame retarder may be employed. Those include any number of types of materials as described in the paragraphs spanning columns 12 and 13 of Mogami. Among the inorganic flame retarders mentioned is a so-called "Mg type" flame retarder.

However, there is no disclosure, teaching or suggestion with respect to the characteristics mentioned above by the Applicants such as hydrolysis resistance and metal pollution characteristics. Moreover, there is utterly no disclosure concerning the amount of the other flame retarders that may be used. Those skilled in the art are left completely at sea as to how much of such flame retarders should be included. In any event, there is utterly nothing in Mogami that would leave one skilled in the art to the conclusion that 0.1–5% of a particular component, such as the Mg type component would or could have any material effect, much less the effect factually established by the Applicants with respect to hydrolysis resistance and metal pollution characteristics.

In that regard, the Applicants have already established the unexpected results associated with the claimed amount of the alkaline earth compound in the Applicants' composition and there is utterly nothing in Mogami that provides teachings or suggestions to those skilled in the art that would lead to the Applicants' claimed quantity of alkaline earth compound. Thus, even if one skilled in the art were to make the hypothetical combination of Mogami with Klatt, the resulting combination

would still fail to teach or suggest the Applicants' claimed quantity of 0.1-5% of alkaline earth compound. The Applicants therefore respectfully submit that the hypothetical combination of Mogami with Klatt is inapplicable.

The Applicants respectfully submit that Yamamoto is still further afield. In particular, the Applicants respectfully submit that one skilled in the art would not look to Yamamoto inasmuch as Yamamoto discloses, among other things, the use of polyphenylene ether resin and/or polyphenylene sulfide resin. The Applicants are not interested in the use of either of those compounds as specifically disclosed in the Applicants' Specification on page 38 in paragraph 0116. Thus, the Applicants do not believe that one skilled in the art would look to Yamamoto either alone or in combination with Klatt.

In any event, the Applicants note with respect to Yamamoto that, as in the case of Mogami, the presence of an alkaline earth compound is optional. Specifically, Yamamoto teaches the potential use of 0-150 parts per weight of alkaline earth compound for 100 parts by weight of polyester resin and polyphenylene ether resin and/or polyphenylene sulfide resin. The fact that the alkaline earth compound is optional reinforces the notion that there is utterly no importance established by Yamamoto with respect to the amount of that component. Moreover, as disclosed by Yamamoto in column 9 beginning at line 17, Yamamoto attributes no importance to the fact that the "reinforcing filler" is an alkaline earth composition. There are any number of organic and inorganic compounds that may be used and, once again, the material itself is categorized a "reinforcing filler" which is nothing more than the conventional use of fillers having nothing to do with the Applicants claimed alkaline earth metal compound that provides particular characteristics to the composition. This is achieved by the Applicants not only by the choice of the material, but the quantity of the material as established by the Applicants in their Specification in the examples and comparative examples.

The Applicants therefore respectfully submit that one skilled in the art would not look to Yamamoto in the first place and would not hypothetically combine Yamamoto with Klatt. In any event, even if the hypothetical combination were to be made, the result would still fail to teach or suggest the Applicants' claimed 0.1-5% by weight of an alkaline earth metal compound. Withdrawal of Yamamoto is respectfully requested.

The Applicants respectfully submit that Asano is also inapplicable. For example, Asano suffers the same deficiency set forth above with respect to Yamamoto. Namely, Asano discloses a composition having a thermoplastic resin containing at least one of an aromatic polyester resin and a polyamide resin, at least one of rubber-containing copolymer of a vinyl cyanide and an aromatic vinyl and aromatic vinyl, at least one of a polyphenylene ether resin and a polyphenylene sulfide resin, a non-halogen, organic or inorganic flame retardant and, optionally, a filler. This disclosure contains the same problems as Yamamoto with respect to the fact that it employs polyphenylene ether and/or polyphenylene sulfide. The Applicants have already established that they do not utilize either or both of those components. This alone would cause one skilled in the art to look away from Asano.

In any event, Asano discloses a number of flame retardants including phosphorus flame retardants, triazine compounds and inorganic flame retardants. Among the inorganic flame retardants are any number of compounds including calcium carbonate, calcium hydroxide and barium carbonate. The total amount of fire retardant is preferably 1-60 parts by weight. However, there is no disclosure as to how much of the inorganic flame retardant should be used relative to the others. Also, there is utterly no importance associated with any amount of those materials inasmuch as they disclose a huge range of 1-60 parts by weight based on 100 parts by weight of the thermoplastic resin.

The Applicants have already established unexpected results regarding the actual alkaline earth metal component in combination with the claimed 0.1-5% by weight of that component. The Applicants have established that less than 0.1% of the alkaline earth metal component results in poor hydrolysis resistance and poor metal pollution characteristics. On the other hand, the Applicants have also established that more than 5% of alkaline earth metal compound results again in poor hydrolysis resistance and poor metal pollution characteristics. The Applicants have therefore established unexpected results nowhere taught or suggested by Asano, whether taken individually or collectively with Klatt. The combination is therefore inapplicable to the Applicants' solicited claims. Withdrawal of that rejection is also respectfully requested.

In summary, Klatt, Mogami and Yamamoto do not disclose, teach or suggest (B) and Klatt does not disclose, teach or suggest (E). Mogami, Yamamoto and Asano disclose magnesium hydroxide or calcium carbonate. However, they do not reach or suggest the claimed amount of magnesium hydroxide or calcium carbonate. This is shown in the attached Table.

In general, neither magnesium hydroxide nor calcium carbonate are compounded with the polyester resin composition. This is because magnesium hydroxide dehydrates during compounding and promotes hydrosis of polyester. Also, calcium carbonate promotes hydrosis of polyester as an alkaline catalyst if it is compounded in a large amount.

When magnesium hydroxide or calcium carbonate are used as the inorganic flame retardants or the reinforcing filler of polyolefin, etc., the amount of 10% by weight or more is usually compounded. The attached documents demonstrate this point.

On the other hand and in sharp contrast, by using the specific claimed vinyl-based resin and a small amount of magnesium hydroxide and/or calcium carbonate, the Applicants have surprisingly achieved a very high effect of enhancing hydrosis resistance and improved metal pollution char-

acteristic. None of this is taught or suggested by the prior art, whether taken collectively or individually.

In light of the foregoing, the Applicants respectfully submit that Claims 1-16 are patentable over the combination of the secondary references with Klatt and respectfully request that the rejection be withdrawn.

The Applicants also respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC:as
(215) 656-3381

Amended Claim 1	Klatt	Nogami	Yamamoto	Asano
(A) 20-70% by weight of a polybutylene terephthalate resin or a mixture of a polybutylene terephthalate	polyester (Claim 1)	polyester (Claim 1) polyalkylene terephthalate (Claim 15)	polyester (Claim 1) polyalkylene terephthalate (Claim 8)	polyethylene terephthalate or polybutylene terephthalate (Claim 3)
(B) 1-20% by weight of an acrylonitrile/styrene copolymer containing acrylonitrile at 10 wt% or	No description	No description	No description	Component (A-3) AS resin . The acrylonitrile content of the copolymer was 23% by weight (c.10 l.45-52)
(C) 1-20% by weight of a phosphoric acid ester	Triphenyl phosphate (Claim 3)	phosphoric acid ester (Claim 18)	phosphoric ester (Claim 1)	red phosphorus (Claim 1) phosphoric esters (c.6 l.37)
(D) 1-30 by weight of a salt of a triazine based compound and cyanuric acid or isocyanuric acid, and (E) 0.1-5% by weight of magnesium hydroxide and/or calcium carbonate	melamine cyanurate (Claim 1)	melamine cyanurate (Claim 12)	melamine cyanurate (Claim 1)	melamine cyanurate (cl.8 l.61)
and (E) 0.1-5% by weight of magnesium hydroxide and/or calcium carbonate	No description calcium and zinc stearates (Claim 15) are different from magnesium hydroxide and/or calcium carbonate	inorganic flame retarders such as Mg type (c.12 l.64-65) means magnesium hydroxide	Examples of the reinforcing filler , such as calcium carbonate (c.9 l.25)	inorganic flame retardants--- calcium carbonate (c.9 l.10-11)